

Image Analysis Report

Denoising and Edge Detection Comparison

Generated on 2024-11-04 17:10:33

Method: Original

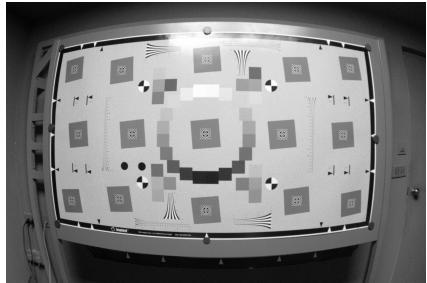
Analysis Metrics:

Signal-to-Noise Ratio (SNR):

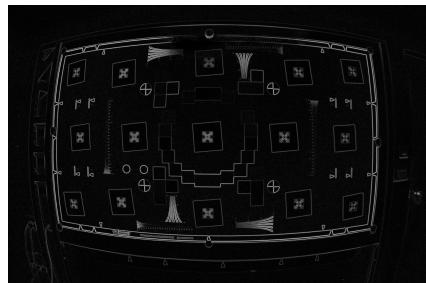
- Dark Region: 7.74 dB
- Mid Region: 9.53 dB
- Light Region: 16.08 dB

Edge Detection Metrics:

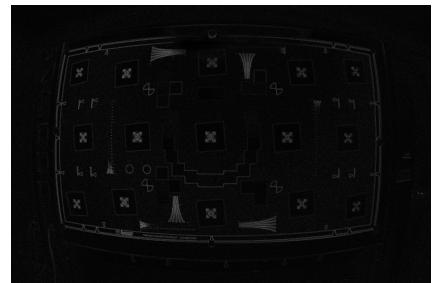
- Sobel Edge Strength: 12.58
- Laplacian Edge Strength: 9.77



Filtered Image



Sobel Edge Detection



Laplacian Edge Detection

Method: Median

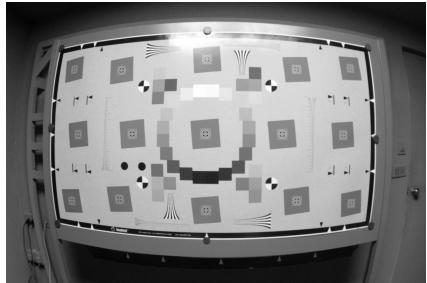
Analysis Metrics:

Signal-to-Noise Ratio (SNR):

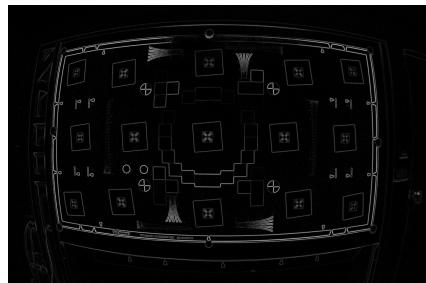
- Dark Region: 8.44 dB
- Mid Region: 10.22 dB
- Light Region: 18.54 dB

Edge Detection Metrics:

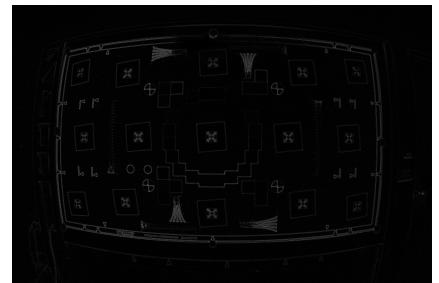
- Sobel Edge Strength: 7.77
- Laplacian Edge Strength: 5.16



Filtered Image



Sobel Edge Detection



Laplacian Edge Detection

Method: Bilateral

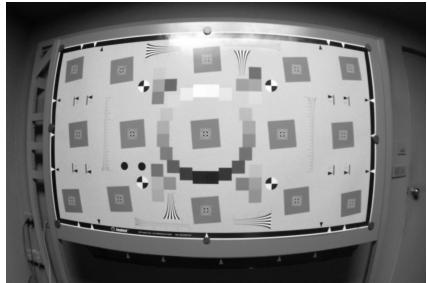
Analysis Metrics:

Signal-to-Noise Ratio (SNR):

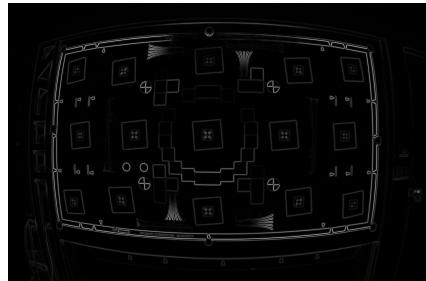
- Dark Region: 8.68 dB
- Mid Region: 10.90 dB
- Light Region: 19.90 dB

Edge Detection Metrics:

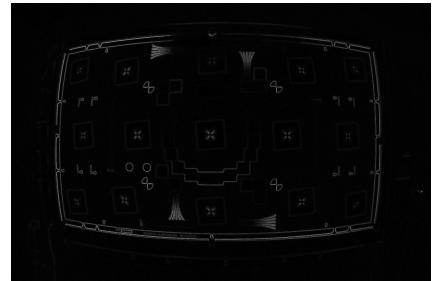
- Sobel Edge Strength: 6.84
- Laplacian Edge Strength: 5.71



Filtered Image



Sobel Edge Detection



Laplacian Edge Detection

Method: Gaussian

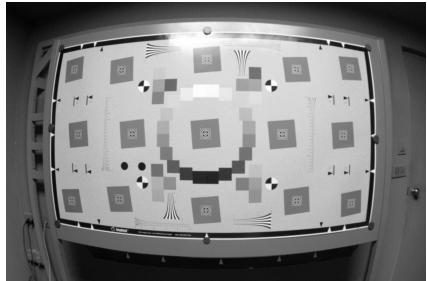
Analysis Metrics:

Signal-to-Noise Ratio (SNR):

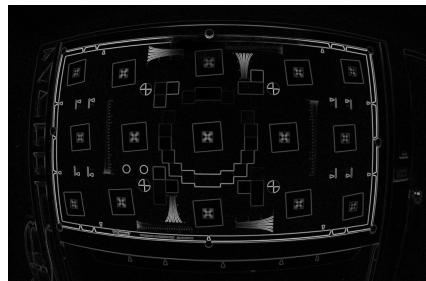
- Dark Region: 8.37 dB
- Mid Region: 10.27 dB
- Light Region: 18.17 dB

Edge Detection Metrics:

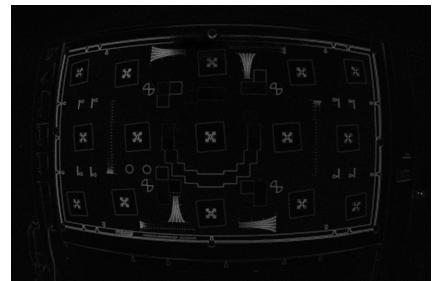
- Sobel Edge Strength: 12.42
- Laplacian Edge Strength: 10.35



Filtered Image



Sobel Edge Detection



Laplacian Edge Detection

Method: AI-Denoised

Analysis Metrics:

Signal-to-Noise Ratio (SNR):

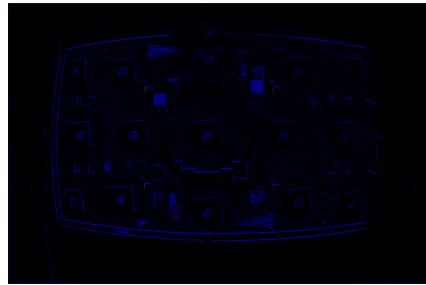
- Dark Region: 37.82 dB
- Mid Region: 37.84 dB
- Light Region: 37.86 dB

Edge Detection Metrics:

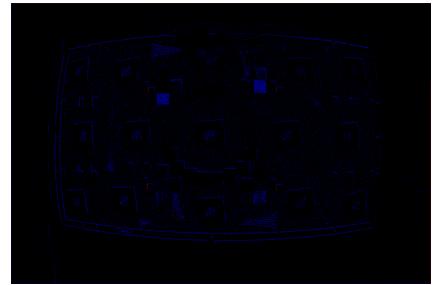
- Sobel Edge Strength: 3.29
- Laplacian Edge Strength: 2.12



Filtered Image



Sobel Edge Detection



Laplacian Edge Detection

Comparative Analysis Summary

Method	SNR Dark	SNR Mid	SNR Light	Edge Sobel	Edge Laplacian
Original	7.74	9.53	16.08	12.58	9.77
Median	8.44	10.22	18.54	7.77	5.16
Bilateral	8.68	10.90	19.90	6.84	5.71
Gaussian	8.37	10.27	18.17	12.42	10.35
AI-Denoised	37.82	37.84	37.86	3.29	2.12